Transforming THE ENVIRONMENT

The U.S. Air Force's new capabilities-based approach to environmental issues and programs integrates mission requirements with restoration and sustainment of natural resources.

By Maureen T. Koetz, deputy assistant secretary of the Air Force for Environmental, Safety & Occupational Health

The U.S. Air Force's new message, "Transformation is key to a 21st century-strategy for managing its environmental resources," has led us to a capability-based approach to protecting national security, focusing investments on capabilities needed to satisfy warfighter requirements. Under this new concept of operations, our programs must advance toward providing integrated capabilities that minimize the time required, the treasures expended and the risks incurred, to achieve our warfighting mission.

History

During hundreds of years, common law property rights have evolved from a few restraints on property use to many, such as zoning and environmental protection. Driven primarily by changes in social values and better understanding of risk and harm, modern environmental laws manage risk by redefining where costs were internalized. This has been accomplished through statutes and regulations that control access to air, land and water over the production lifecycle (conservation areas, permits, emission limits), and that establish new costs through penalties.

In response, the Air Force has done an outstanding job of managing the enforceable elements of environmental laws in "traditional" program areas such as air quality, water supply, pollution prevention and cleanup. Our enforcement actions are down 91%, hazardous waste has been reduced by more than 62% (30 million lbs), toxic release emissions are 65% lower (3.3 million lbs) and more than 5,810 sites have been cleaned up. We have superbly managed environmental compliance. Still, greater challenges are on the horizon.

Why Transform?

Economic and urban development and the continuing growth of environmental regulations of the past several decades have created competing needs for resources at our installations. The competing needs, shown in Fig. 1, put pressure on the resource base (encroachment) that can only be relieved by assuming either an operational risk (alter flying operations) or financial risk (pay more to do the same).

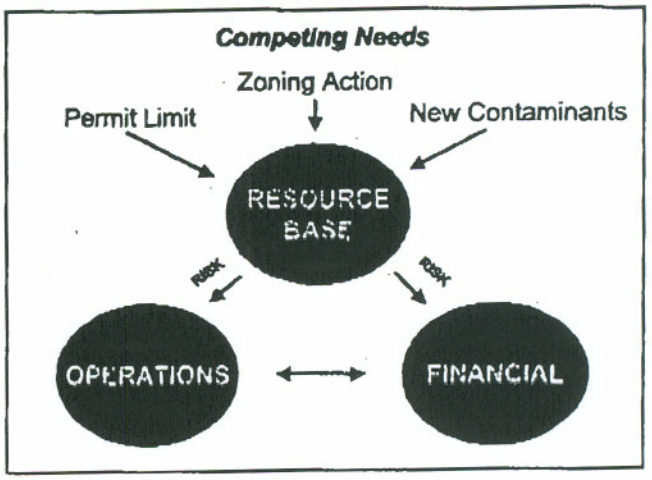

Figure 1. Encroachment Risk

In some cases, both operational and financial risks have to be absorbed to sustain operations. The Air Force tends to address such competing needs on a case-by-case basis, called "workarounds," making it difficult to fully quantify the encroachment and take proactive measures. By focusing on operational requirements and following the regulatory strictures for sustaining the resources, environmental programs achieve the dual aims of warfighter support and environmental protection. Like construction projects and building codes, compliance is an inherent element of sustaining a valuable natural asset to perform a mission. The transformation required is described by four principles.

Four Principles of Transformation

- Ensure the future resource base is capable of supporting mission requirements by identifying and managing operational and financial risks to resource requirements in an objective and quantifiable manner. This will require the development of tools to assess present and future operational requirements against the resources available (air shed, water supply, land area). This capability modeling allows leaders to understand the resources required for a unit of operations and ensures they are secured and sus-

tained at needed levels. All resources, not just those that represent the built infrastructure, should be managed through base and mission support comprehensive plans.

• Make informed risk management decisions based on total environment, safety and occupational health (ESOH) sustainment costs. The full burden of ESOH costs and investment are embedded in activities across the spectrum of funding lines and activities. As a result, decision makers often can't appreciate the full expenditure levels required to manage ESOH requirements, as many are inherent in military construction projects, acquisitions, and daily operation and maintenance costs. For example, asbestos and lead paint abatement programs are sustained through military construction funding; and acquisition programs invest in significant research to reduce hazardous materials or control pollution from new weapons system operation. To make fully informed business decisions, we must develop windows of visibility into these sustainment costs.

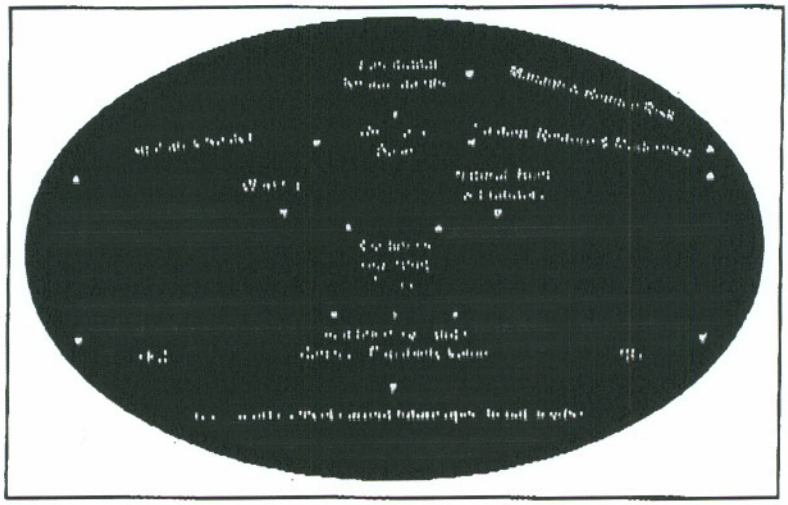

Figure 2.
Air Force Environment, Safety and Occupational Health Management System

• We must leverage the value of our natural infrastructure and the knowledge gained from more than 25 years of environmental investments. We invest about $1 billion annually in direct spending to sustain our natural infrastructure; protecting valuable assets as we simultaneously address environmental liabilities. These investments have sustained or restored land, water and air; created significant reservoirs of biodiversity; enabled groundwater recharge capability; and protected wetlands, forests, natural habitat, and migration pathways. These assets have an ongoing equity value that can be appraised and "booked" to enable more effective and efficient programming and management in concert with stakeholders who share in, and benefit from, equity partnerships. Also, we can leverage the knowledge gained from decades of investing in asset management, enabling cost-efficient, cost-effective sustainment that avoids process-centric efforts and continues to grow value.

• When possible, tie ESOH planning and budgeting decisions to quantified resource requirements in a comprehensive investment strategy that manages operational and financial risk across the ESOH spectrum. A key tool to accomplish this is our ESOH Management System (ESOHMS). Fig. 2 shows how it works. Operational requirements define the level of resourcing required; the ESOHMS ensures program and budgeting processes sustain, restore and modernize this resource base to levels needed for operational capability. The combination of legal and operational requirements defines the sustainment required. A new focus for metrics and measures of merit will be key to moving ESOHMS from process to performance. For example, the U.S. Environmental Protection Agency's cleanup performance could be used to measure acres of land returned to productive reuse.

Transformation in Action

The transformation we are pursuing is not a wholesale program change, but rather a course correction from compliance to operational focus. A prime example of where these principles are being applied today is at McGuire Air Force Base, N.J. McGuire is in an area considered non-attainment for ozone. As it prepared to transition from C-141 to C-17 aircraft, an air shed capacity analysis showed the base was in compliance with nitrogen oxide (NOx) emission levels, but no "room" existed in the permits to allow for added missions. However, because the base had invested in pollution prevention projects and lowered its volatile organic compound emissions, the reductions were an asset that could be "traded" for an additional NOx allocation and the base doubled its mission capability.

Summary

Sustaining Air Force operations and the resources used to support them will require transformation of our environment, safety and occupational health programs. ESOH transformation begins by understanding that natural infrastructure assets are scarce resources; they require investment to sustain. Next, we must have a clear picture of the operational requirement and the levels of natural infrastructure required to support them. Finally, required resources are then sustained, restored, and modernized in concert with applicable laws and regulations to meet the operators' needs. Reporting tools and information management systems that integrate data and information across the installation will be used to determine whether the resources are meeting current and future operational needs and drive management decision-making. The result: sustainable operations into the 21st century that secure resources for today's Air Force and tomorrow's generations. TME